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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Rudolf Bohdal

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EXAMINER

YOUNGER, SEAN JERRARD

ART UNIT

PAPER NUMBER

3745

MAIL DATE

DELIVERY MODE

07/15/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/564,076	Applicant(s) BOHDAL, RUDOLF	
	Examiner SEAN J. YOUNGER	Art Unit 3745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 February 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 17-19, 21-29 and 31-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 17-19, 21-29 and 31-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 April 2009 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 17-19, 21-29 and 31-33 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 17-19, 29 and 31-33 are rejected under 35 U.S.C. 102(b) as being anticipated by Kawakami et al. [U.S. 5,733,498]. Regarding claims 17 and 33, Kawakami et al. disclose a method for manufacturing vane segments for a gas turbine comprising the steps of providing a plurality of vanes, and manufacturing a vane segment via powder metallurgy. The step of manufacturing includes the steps of mixing a metal powder having a binding agent to form a homogeneous material [column 14, line 65 – column 15, line 3], forming at least one molded body from the homogeneous material via injection molding [column 15, lines 23-25], subjecting the at least one molded body to a debinding process [column 15, lines 52-53], and compressing the at least one molded body via sintering to form the vane segment [column 15, lines 53-54].
4. Regarding claims 18 and 19, the guide vane segment includes four guide vanes.

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5. Regarding claim 29, Kawakami et al. disclose a component for a gas turbine comprising a guide vane segment (11) manufactured from a plurality of guide vanes via powdered metallurgy injection molding.
6. Regarding claims 31 and 32, the guide vane segment includes four guide vanes connected via an inner cover band (13) and an outer cover band (12).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawakami et al. [U.S. 5,733,498] in view of Sugihara et al. [U.S. 5,554,338]. Kawakami et al. disclose all elements substantially as claimed, but fail to disclose the order of joining and debinding steps. Sugihara et al. teach a method of preparing a composite sintered body, where a molded body for each part is prepared and then the molded bodies are joined together in the green state prior to the debinding and sintering process to form one molded body. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the method of Ford to include the ability to form individual elements and join them before debinding and sintering, as taught by Sugihara et al., because the technique for a particular process

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was within the capabilities of a person of ordinary skill, in view of the teaching of the technique for improvement in similar situations.

9. Claims 24-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawakami et al. [U.S. 5,733,498] in view of Gegel et al. [U.S. 6,551,551]. Kawakami et al. disclose all elements substantially as claimed, but fail to disclose the order of joining and debinding steps. Gegel et al. teach a method of preparing a composite sintered body, where separate molded bodies go through a debinding process before they are joined in a presintered state to form one body [column 6, lines 20-25], and are subsequently subjected to a uniform sintering process. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the method of Ford to include the ability to form individual elements and join them before debinding and sintering, as taught by Sugihara et al., because the technique for a particular process was within the capabilities of a person of ordinary skill, in view of the teaching of the technique for improvement in similar situations.

10. Claims 27 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawakami et al. [U.S. 5,733,498] in view of Ford Motor Company, Ltd. (Ford) [GB 1,470,949]. Kawakami et al. disclose all elements substantially as claimed, but fail to disclose that a joint molded body is formed, via injection molding, for all vanes of the segment. Ford teaches that a complex molded body comprising multiple airfoils (12) and a supporting cover band (14) can be formed in one piece, via injection molding. It

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would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the method of Ford to include the ability to form individual elements and join them before debinding and sintering, as taught by Sugihara et al., because the technique for a particular process was within the capabilities of a person of ordinary skill, in view of the teaching of the technique for improvement in similar situations.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
12. The patent to French et al. [U.S. 4,456,713] discloses material compositions for injection molding, including binder.
13. The patent to Meinhardt et al. [U.S. 6,562,290] disclose a method for making an article by powder metallurgy injection molding comprising mixing, molding, debinding and sintering steps, including teaching equivalence between metallic and metal-ceramic composite components in the powder injection molding process.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SEAN J. YOUNGER whose telephone number is (571)270-3763. The examiner can normally be reached on M-F 7:30-5:00 EST, Alt. Fri off.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Look can be reached on 571-272-4820. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Sean J. Younger/
Examiner, Art Unit 3745

/Edward K. Look/
Supervisory Patent Examiner, Art Unit 3745